



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,769	06/01/2000	Tomoya Nishibata	P107344-00001	5361

23353 7590 12/24/2003

RADER FISHMAN & GRAUER PLLC  
LION BUILDING  
1233 20TH STREET N.W., SUITE 501  
WASHINGTON, DC 20036

EXAMINER
----------

JOYCE, WILLIAM C

ART UNIT	PAPER NUMBER
----------	--------------

3682

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SL

# Office Action Summary

Application No.

09/584,769

Applicant(s)

NISHIBATA ET AL.

Examiner

William C. Joyce

Art Unit

3682

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,7,9,23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This Office Action is in response to the amendment filed October 6, 2003 for the above identified patent application.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 7, 9, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rood (US Patent 4,715,733) as applied to claim 1 above, and further in view of Tanishiki (US Patent 5,846,000).

Rood discloses a thrust bearing arrangement in Figure 10 configured for orbital motion, the thrust bearing comprising a pair of opposing plates (20e,22e), a track pocket (32) formed in the plates, and a plurality of both end conical rollers (24a) disposed in the track pockets of the opposing plates. Referring to Figure 10, Rood illustrates the relation of the scroll swirl radius and the dimension between opposite tracks of the bearing plates is set in a relation of  $1 < H/R < 5$ .

Rood does not disclose the rollers having a crown, but Tanishiki discloses (column 11, lines 1-6) that the rollers can be formed with a crown. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the

Art Unit: 3682

contact surface of each roller disclosed by Rood with a crown, as taught by Tanishiki, in order to reduce edge loading thereby increasing the operating life of the rollers.

Rood does not appear to show the claimed linking members and positioning parts. Tanishiki teach a roller bearing assembly having linking members (10,11) configured to link opposing plates and positioning parts (20,21) which can engage a swirl unit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the bearing arrangement of Rood with linking members, and positioning parts, as taught by Tanishiki, in order to facilitate the assembly of the bearing arrangement into a swirl unit.

With respect to claim 9, Rood illustrates the track pocket having an inside diameter as the swirl circle of the both-end conical roller, the inner sides of the opposing pair of track pockets are disposed in an eccentric state by the portion of the radius of the swirl circle of the both-end conical roller mutually in a plane view, and the both-end conical rollers are guided and held in nearly elliptical holding holes formed by overlaying these inner sides.

### ***Response to Arguments***

3. Applicant's arguments filed January 16, 2003 have been fully considered but they are not persuasive. As described above, the prior art to Rood and Tanishiki teach the limitations of the instant claims. It is noted that Rood ('733) does not describe the relation of a scroll swirl radius and a dimension between opposite tracks of the bearing plates being set in a relation of  $1 < H/R < 5$  for solving a problem in the art, however Rood

Art Unit: 3682

clearly illustrates the claimed structural feature and therefore Rood anticipates the instant claims.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (703) 305-5114. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9326.

Application/Control Number: 09/584,769

Page 5

Art Unit: 3682

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

*William C. Joyce 12/22/03*  
William C. Joyce